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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,637	08/07/2003	Francois Seguin	531-USA	8469
26031	7590	02/10/2005	EXAMINER	
GEORGE J. PRIMAK 13480 HUNTINGTON PIERREFONDS, QC H8Z 1G2 CANADA			KIANNI, KAVEH C	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/635,637	SEGUIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kianni C Kaveh	2833	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 29-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-13, 19, 26, 28 and 29 is/are rejected.
- 7) ☒ Claim(s) 9, 14-18 and 20-25 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- Applicant's election with traverse of Group I invention claims 1-29, on 12/28/04, in response to the election restriction requirement is acknowledged.

The traversal is allegedly on the ground(s) that the coups of claims relate to two independent and distinct inventions has not been demonstrated. This is not found persuasive, since in the restriction requirement the examiner has clearly explicitly stipulated that invention I, claims 1-29, is directed to an optical component packaging including wherein said housing aperture and said intermediate component channel being configured, sized and positioned so as to allow said strip of optical fiber to extend from a position located inside said housing inner volume to a position located outside said packaging device while defining a fiber-to-channel spacing between said fiber outer surface and said intermediate channel inner surface; while Invention II, claims 30-34, is directed to an optical component packaging wherein said housing aperture and said intermediate component channel being in communication with each other so as to allow said strip of optical fiber to extend from a position located inside said housing inner volume to a position located outside said packaging device. Thus each of the above inventions requires a different search than the other. Furthermore, the examiner further stated that the Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic. Thus, the requirement is still deemed proper and is therefore made FINAL.

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations "Alignment means" of claim 19, "getter" of claim 26, and "a sealing component insertion means" of claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **Allowable Subject Matter**

2. Claim 9, 14-18 and 20-25 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein, the value of said sealing section opening area is generally close to the value of said optical fiber diameter and the ratio of said sealing section opening area to said sealing section length has a value of approximately 1/10. in combination with the rest of the limitations of the base claim.

Claims 14-18 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious said intermediate component attachment section and said housing attachment section being configured, sized and positioned so as to be in a generally overriding relationship relative to one another in combination with the rest of the limitations of the base claim.

Claims 20-25 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein, said alignment means includes a supporting component mounted within said housing inner volume, said supporting component defining a supporting surface for supporting a supported section of said strip of optical fiber in combination with the rest of the limitations of the base claim.

Claim 27 is allowable because the prior art of record, taken alone or in

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combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8, 10-13, 19, 26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trentelman (WO 02/052320 as well as to its US equivalent publication US 6453092).

Regarding claims 1 and 4-6, Trentelman teaches an optical component packaging device (see at least fig. 8, item 94) in combination with an optical component 104 optically coupled to a strip of optical fiber 169, said strip of optical fiber 169 defining a fiber longitudinal axis, said strip of optical fiber 169 being made of an optical fiber

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material defining an optical fiber coefficient of thermal expansion (shown in at least fig. 9, see page 8, 2<sup>nd</sup> parag.), said strip of optical fiber including a fiber core surrounded by a fiber cladding coated with a protective jacket (see page 9, 1<sup>st</sup> parag.), said strip of optical fiber 169 defining a fiber outer surface, said optical component packaging device (shown at least fig. 8) comprising:

a housing 110, said housing defining a housing peripheral wall encompassing a housing inner volume (shown in at least fig. 8, item 110 encompassing housing inner volume), said housing peripheral wall having a housing aperture extending therethrough and leading into said housing inner volume (shown in at least fig. 8, item 110 encompassing housing inner volume has aperture/with-end-caps 112,114 extending therethrough and leading into said housing inner volume), said housing being made of a housing material defining a housing coefficient of thermal expansion (see at least page 14, last parag.+);

an intermediate component 98, said intermediate component being substantially sealingly attached to said housing so as to cover said housing aperture , said intermediate component 98 being made of an intermediate component material defining an intermediate component coefficient of thermal expansion (see page 17, 2<sup>nd</sup> parag.), said intermediate component being provided with a generally encompassing intermediate component channel 136 extending therethrough, said intermediate component channel 136 defining an intermediate channel inner surface and an intermediate channel longitudinal axis (shown in fig. 8, item intermediate channel 136 inner surface in axis 'L2');



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said housing aperture and said intermediate component channel 136 being configured, sized and positioned so as to allow said strip of optical fiber 169 to extend from a position located inside said housing inner volume to a position located outside said packaging device while defining a fiber-to-channel spacing between said fiber outer surface and said intermediate channel inner surface (as shown in at least fig. 8, see item intermediate channel 136 and inserted fiber 169 through housing aperture/window into inner volume);

a sealing component in sealing contact with both said fiber outer surface and said intermediate channel inner surface, said sealing component being made of a sealing component material defining a sealing component coefficient of thermal expansion (see page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag.),

said sealing contact of said sealing component with both said fiber outer surface and said intermediate channel inner surface being facilitated by the relationship between said sealing component, said intermediate component and said optical fiber coefficients of thermal expansion (see page 11, 2<sup>nd</sup>-3<sup>rd</sup> parag. and page 24, last parag.-page 25, 2<sup>nd</sup> parag.).

However, Trentelman does not specifically teach wherein the above optical fiber has a core and cladding, and said sealing component coefficient of thermal expansion is at least equal to said optical fiber coefficient of thermal expansion; wherein, said intermediate component coefficient of thermal expansion is at least equal to said sealing component coefficient of thermal expansion and said sealing component



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coefficient of thermal expansion is at least equal to said optical fiber coefficient of thermal expansion.

Nevertheless, Trentelman states that fiber material CTE is chosen to be desirable for the temperature compensated optical device and/or to the optical fiber (see page 8, 2<sup>nd</sup> parag. and *last parag.*; *page 19 lines 1-8+*) and that the compensation for the coefficient thermal expansion is function of matching different components with respect to each other as well as the housing package as a whole (see at least page 1-page 2). Thus, it is would have been obvious/well-known to those of ordinary skill in the art when the invention was made that an optical fiber is made of inner core and outer cladding and that it is mere matter of design choice to chose the thermal expansion of different component materials in order to produce an optical packaging device that matches/compensate coefficient thermal expansion of the relevant component materials, since such consideration of materials would compensate the thermal expansion of the components in order to protect the device and it this would result in reduced in complexity, size and the cost of packaging optical fiber and associated components (see page 4, lines 20-31).

Regarding claims 2-3, 7-8, 10-13, 19, 26 and 28-29, Trentelman further teaches wherein, said sealing contact of said sealing component with said fiber outer surface and said intermediate channel inner surface is facilitated, at least in part, by a compressive force exerted on said sealing component and generated by the relationship between said sealing component, said intermediate component and said

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optical fiber coefficients of thermal expansion (see page 12; also page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag.);

wherein, said sealing contact of said sealing component with said fiber outer surface and said intermediate channel inner surface is facilitated, at least in part, by a reduction in the tensile stress at the adhesion interface of said sealing component, said reduction in the tensile stress resulting, at least in part from the relationship between said sealing component, said intermediate component and said optical fiber coefficients of thermal expansion (see at least page 24, 2<sup>nd</sup> and 3<sup>rd</sup> parag.);

wherein said intermediate component coefficient of thermal expansion is greater than said optical fiber coefficient of thermal expansion and wherein said intermediate component is configured and sized so as to generate a compressive force on said sealing component (see page 12; also page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag.); wherein, said intermediate component channel defines a sealing section along which said sealing component is in sealing contact with both said fiber outer surface and said channel inner surface, said sealing section defining a sealing section opening area and a sealing section length, the ratio of said sealing section opening area to said sealing section length being minimized so as to reduce water ingress through said sealing component in said sealing section (as shown in fig. 8, item intermediate component channel 136 defines a sealing section along which said sealing component is in sealing contact with both said fiber outer surface and said channel inner surface in which the ratio of said sealing section opening area to said sealing section length being minimized --see page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag--obviously/inherently

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defining the sealing section which would prevent any external substance such as water/moisture to ingress into the inner volume of the package);

wherein, said intermediate component channel defines a sealing section along which said sealing component is in sealing contact with both said fiber outer surface and said channel inner surface, said strip of optical fiber extending in said sealing section being at least partially deprived of said protective jacket (see fig. 8, item unjacketed fiber having grating 104) over at least a jacketless section thereof, whereby said sealing component contacts at least a portion of said fiber cladding over said jacketless section (see fig. 8, item 169 and page 17, 2<sup>nd</sup> parag., page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag.);

wherein, said jacketless section extends generally throughout said sealing section, said fiber outer surface of said strip of optical fiber extending in said sealing section being deprived of said protective jacket generally over its full length, whereby said sealing component sealingly contacts said fiber cladding generally over the full length of said sealing section (see fig. 8, item 169 and page 17, 2<sup>nd</sup> parag., page 11, 3<sup>rd</sup> parag., and page 18, 3<sup>rd</sup> parag.);

said packaging device is provided with a sealing component insertion means for allowing insertion of said sealing component into said intermediate component channel (see fig. 8, item sealings 114,150 and at least page 18, 3<sup>rd</sup> parag., wherein insertion of sealant(s) are obviously implemented by insertion means such as by a user or any device);

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wherein, said intermediate component channel defines a sealing section along which said sealing component is in sealing contact with both said fiber outer surface 172 and said channel inner surface; said intermediate component channel also defining a guiding section extending from said sealing section; said sealing component insertion means including an insertion channel formed in said intermediate component, said insertion channel extending from a position located outside said packaging device to a position wherein it merges with said guiding section (shown in at least figures 8 and 9; see intermediate component 98 and channel 136 which extends throughout device and to outside packaging forming guiding section for at least guiding optical fiber);

an alignment means for aligning said strip of optical fiber relative to said intermediate component channel so that said fiber longitudinal axis extends in a generally parallel relationship relative to said intermediate channel longitudinal axis (shown at least in fig. 8, see item component 154 that aligns the fiber 169);

a getter component, said getter component being positioned within said housing inner volume for absorbing moisture and contaminants contained therein (see page 25, lines 24-33 and page 16, last parag.);

a strain relief sleeve mounted over a distal end of said intermediate component for limiting the radial deflection of a section of said strip of optical fiber located outside said intermediate component adjacent said distal end thereof (see at least fig. 9, item 200).

a clearance means for creating a predetermined clearance adjacent a section of said strip of optical fiber located inside said housing inner volume, said predetermined clearance allowing lateral deflection of the optical component and adjacent strips of optical fiber under dynamic excitation with reduced risks of contacting adjacent structures (see at least fig. item clearance 88 or 81 and page 2, lines 1-20 and page 20, lines 8-23; wherein clearance/empty space surrounding the fiber avoids shock/dynamic-excitation with respect to the fiber).

#### ***Citation of Relevant Prior Art***

5. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Haake 5881198

Haake 5606635

Pollock 5936494

Carrier et al. 20020179683

Jin 20020110344

Berry et al. 4657346

Grunbeck et al. 20020181909

Moshriky et al. 6526212

Shay 4387505

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These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

**Contact Information**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni  
Patent Examiner  
Group Art Unit 2883

February 4, 2005